

Summary of Outreach and Gender & Diversity Activities

**CA18108: Quantum gravity phenomenology
in the multi-messenger approach (QG-MM)**



Funded by the Horizon 2020 Framework Programme
of the European Union





COMMITTEE FOR OUTREACH AND GENDER ACTIVITIES

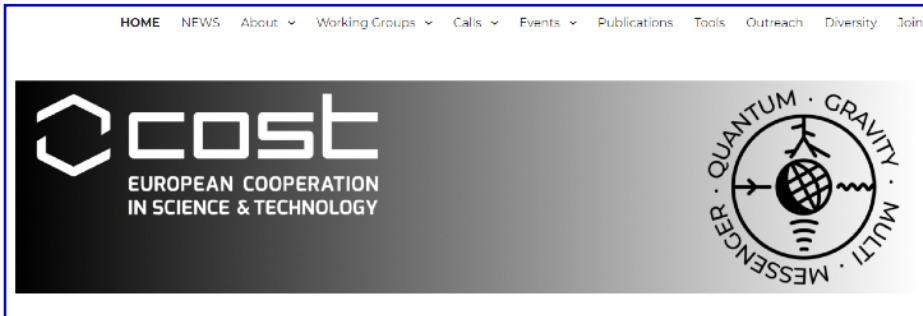
Science Communication Manager: [Mariam Tórtola](#) (IFIC (UV-CSIC), Spain)

Committee Members:

Milan Milosevic, Astrid Eichhorn, Jackson Levi Said, Giulia Gubitosi, Juan Antonio Aguilar Sánchez, Armando di Matteo, Julien Bolmont, Filipe Joaquim, José Manuel Carmona, Tomislav Terzić, David Benisty, Marina Manganaro, Maria Haney, Andrea Fuster, Christian Pfeifer, Flavio Mercati, Rafael Alves Batista, Foteini Oikonomou, Pablo Martínez-Miravé, Antonio Ferreiro, Leïla Haegel, Celia Escamilla-Rivera, Dijana Dominis Prester, Jelena Strišković, Ofek Birnholtz, Alessia Platania, Iarley Pereira Lobo, Marc Schiffer, Claudio Paganini, Aaron Held, Débora Barreiros, Angelo Ricciardone, Andrew Miller, Sébastien Clesse, Vincenzo Vitagliano, Suvodip Mukherjee, Maykoll Reyes, Daniele Vernieri, Gaetano Luciano, Prado Martín-Moruno, Leanne Durkan, Antonia Frassino, Mariam Bouhmadi López, Ayben Karasu Uysal, Rishabh Jha, Charalampos Tzerefos, Fabian Wagner, Konstantinos Dialektopoulos, Fotios Anagnostopoulos

Outreach & Communication

Action Website



QG-MM: COST Action CA18108

QUANTUM GRAVITY PHENOMENOLOGY IN THE MULTI-MESSENGER APPROACH



Group picture @ the kick-off meeting in Barcelona, October 2019

The exploration of the Universe has recently entered a new era thanks to the multi-messenger paradigm. The detection of cosmic particles (photons, neutrinos, cosmic rays), now joined by the birth of gravitational wave astronomy, gives us information about the different sources in the Universe and the properties of the intergalactic medium

The most energetic events allow us to test our physical theories at energy regimes which are not directly accessible in accelerators. This is in fact the target of quantum gravity phenomenology, a quite recent field of physics that tries to set phenomenological models that may incorporate some of the effects of the Planck scale, thus providing a bottom-up approach to the largely studied quantum gravity problem.

OUR GOAL

The main objective of the proposed COST Action is to gather theoretical and experimental working groups from the relevant communities (with appropriate theoretical and gender balance) to work in the

NEWS

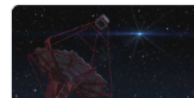
- COST publishes a FAQ document concerning coronavirus impact on Action Grants
- COST CA18108 celebration of the International Day of Women and Girls in Science
- Universidad Nacional de La Plata joins CA18108 as IPC institution
- 3rd IFC Conference call is open
- Russia and Armenia join as Near-Neighbour Countries in COST Action CA18108

JOIN OUR PUBLIC TELEGRAM CHANNEL

[Quantum gravity and Multi-Messenger Physics](#): News on cosmology, particle and astroparticle physics (gamma-rays, neutrinos, cosmic rays and gravitational waves).

Tweets by @COST_QGMM

COST CA18108: QG-MM
@COST_QGMM
On the occasion of the #WomenInScienceDay, our colleagues from Rijeka University @DjunaCorina @IreneManganaro, Jelena Stršković and Marve Golik have appeared on the Croatian media. Find her participation in these two links: bit.ly/2vWkA1u or bit.ly/2loUkAz



Astrofizičanke svijetskog glasa s riječk...
Dok mnogi odlaze iz Hrvatske, talijanska...
magazin.hr

8 Mar 2020

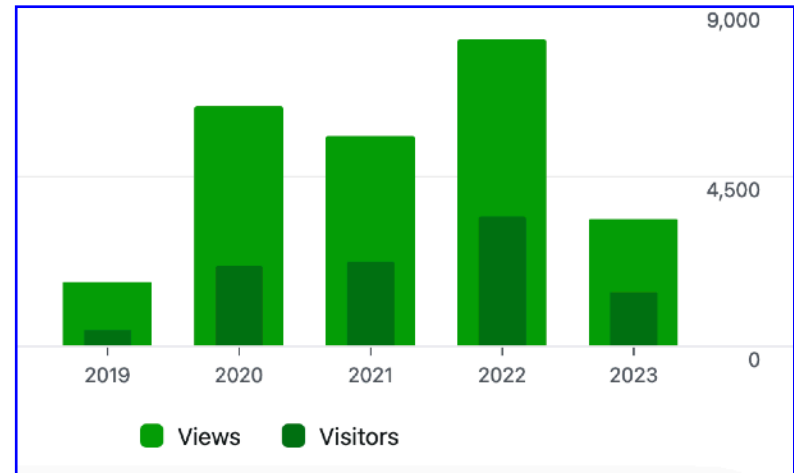
COST CA18108: QG-MM
@COST_QGMM

Dear followers

In the last 25 days we highlighted the achievements of the favourite female scientist of QGMM members. The collected slides can be downloaded for free use on our homepage:

<https://qg-mm.unizar.es/>

39 posts
> 25000 views
> 9500 visitors



Social Media



[@COSTQGMM](#)

Quantum Gravity Phenomenology in the Multi-Messenger approach
598 Me gusta · 625 seguidores

625 followers



[@COST_QGMM](#)

COST CA18108: QG-MM
@COST_QGMM

#COSTAction Quantum gravity phenomenology in the multi-messenger approach
@COSTprogramme

137 Siguiendo 147 Seguidores

147 followers



[@cost_qgmm](#)

cost_qgmm Siguiendo Enviar mensaje

34 publicaciones 100 seguidores 39 seguidos

COST CA18108: QG-MM
EU-funded research network
Quantum Gravity Phenomenology in the multi-messenger approach
(COST Action: CA18108 - @cost_programme)
qg-mm.unizar.es
cesararbonilla, mareiglo, chr.and.t

100 followers



[@COST_QGMM](#)

Quantum Gravity and Multi-Mes...
70 suscriptores

t.me/COST_QGMM
Enlace

Telegram channel of the COST Action CA18108 "Quantum gravity phenomenology in the multi-messenger approach" (QG-MM). News on cosmology, particle and astroparticle physics (gamma-rays, neutrinos, cosmic rays and gravitational waves)

70 subscribers

Posts on Social Media and the Website

Awards



CA18108 Action participants receive
Honorable Mention
in the **2023 Gravity Research
Foundation essay competition**



Events



COST CA18108
First training School
(27 September - 5 October 2021)
Second Annual Conference
(6 - 8 October 2021)
in Corfu (Greece)



**QUANTUM GRAVITY
PHENOMENOLOGY**
at the dawn of the
multi-messenger era.
A review.

Publications

TODAY ON ARXIV
2111.05659 [hep-ph]

Outreach



**CHERENKOV
LIGHT IN
THE SKY**



Quantum Gravity and Multi-Messenger Physics
Our galaxy seen through a new lens: neutrinos detected by
IceCube

via [icecube.wisc.edu](https://www.icecube.wisc.edu)

Science news

Telegraph
Our galaxy seen through a new lens: neutrinos detected
by IceCube
Our Milky Way galaxy is an awe-inspiring feature of the
night sky, viewable with the naked eye as a horizon-to-hor...



Public talks



Astrid Eichhorn
(Barcelona, 2019)



Licia Verde
(Granada, 2020)



Giulia Gubitosi
(Rijeka, 2023)

Gender & Diversity Activities

International Day of Women & Girls in Science 2020

International Day of Women and Girls in Science

My favourite female scientist



Lise Meitner (1878-1968)

- Nuclear physicist who discovered nuclear fission and protoactinium
- She refused joining the Manhattan Project to create the atomic bomb
- 48 times nominated to the Nobel Prize but never awarded
- Element 109 (Meitnerium) was named in her honor



<http://qg-mm.unizar.es/>

 @COST_QGMM

 @COSTQGMM

 @COST_QGMM

Mariam Tórtola
Ramón y Cajal Researcher
IFIC (CSIC/U.València)
SPAIN



 **cost**
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

International Day of Women & Girls in Science 2020



CA18108

Quantum Gravity Phenomenology
in the Multi-Messenger Approach

presents

Women and Girls in Science

<http://qg-mm.unizar.es/>

 @COST_QGMM

 @COSTQGMM

 @COST_QGMM

24 members of the
Action participated
presenting their favourite
female scientist

The slides were
published on our **social
media** (FB, TW) and at
some research centers


International Day of Women and Girls in Science My favourite female scientist


Laura Bassi (1711-1788)

- Italian physicist and academic, first woman in the world to be appointed a university chair in a scientific field of studies (University of Bologna, 1732), and second woman to earn a philosophy doctorate after Elena Cornaro Piscopia in 1678, fifty-four years prior
- She was a key figure in spreading the study of Newtonian mechanics through Italy. She also carried out experiments of her own in all aspects of physics, giving also private lessons
- In her lifetime, she was the author of 28 papers, the majority of these on physics and hydraulics. Only four of her papers were printed



<http://qg-mm.unizar.es/>

 @COST_QGMM

 @COSTQGMM

 @COST_QGMM

All the slides are
available in the
Diversity section of our
website

José Manuel Carmona
Action Chair of COST Action CA18108
University of Zaragoza
SPAIN




EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY



International Day of Women & Girls in Science 2021

11F International Day of Women and Girls in Science



Jelena Strišković
PhD student
CROATIA

- **PhD student** at University of Rijeka
- **Teaching assistant** at J. J. Strossmayer University of Osijek
- **Research** interests include experimental searches for **Lorentz invariance violation** using very high energy gamma rays
- **Member** of **MAGIC** and **LST** collaborations and COST Action **CA18108**
- **Booklover** (SF, fantasy, dystopian, contemporary...)

International Day of Women & Girls in Science 2021

11F International Day of Women and Girls in Science



Giulia Gubitosi
Researcher
Università di
Napoli Federico II
ITALY

- **Researcher** at University of Naples "Federico II".
- **Research** interests include **quantum gravity** (Lorentz symmetry violations, noncommutative geometry) and **quantum gravity phenomenology, early universe cosmology** (Cosmic Microwave Background, Inflation).
- **Core group member and Working Group vice-leader** of **COST Action CA18108**.
- **Gravity Research Foundation Award** for essays on gravitation, **Campus de Excelencia Internacional Fellow**, "Sapienza" University of Rome Excellence award, Della Riccia Foundation Fellow.



15 female members of the Action participated presenting their profile

The slides were published on our **social media (FB, TW, Telegram)** and at some research centers

All the slides are also available in the **Diversity** section of our **website**

11F International Day of Women and Girls in Science



Denise Boncioli
Researcher at the Department of Physical and Chemical Sciences, University of L'Aquila, Italy

- **Researcher** at University of L'Aquila.
- **Research** interests include **Cosmic-Ray and Neutrino Phenomenology** (interactions and propagation of ultra-high energy cosmic rays, multimessenger aspects, sources of high-energy neutrinos, exotic physics with cosmic rays).
- **Member of the Pierre Auger Collaboration**, since 2019 **Leader of the Cosmic-Ray Phenomenology** task force.
- Actively involved in the **study of the gender balance** at the University of L'Aquila.
- Member of **COST Action CA18108**



International Day of Women & Girls in Science 2022

Report on Gender Balance in our COST Action



COST ACTION CA18108:

ON THE GENDER GAP

International Day of Women & Girls in Science 2022

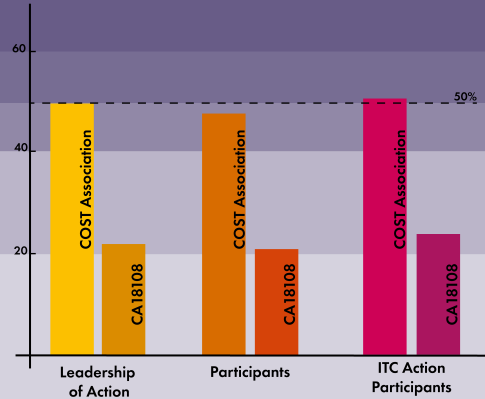
Report on Gender Balance in our COST Action



COST ACTION CA18108:

ON THE GENDER GAP

% of women



The gender gap, which is particularly large in the field of physics, clearly manifests in the statistics of the COST Action CA18108.

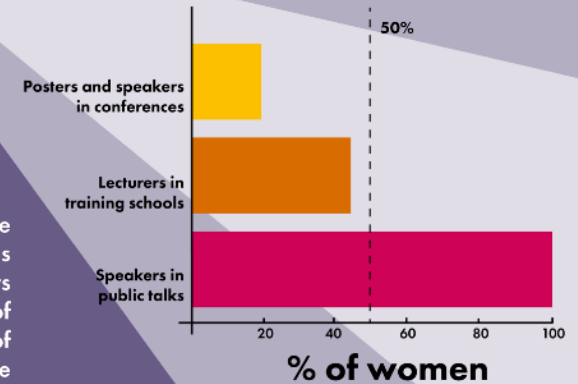


The gender gap in our Action is particularly present in some subfields.

However, the percentage of women in leadership positions in our Action is larger than the average percentage of female participation in the Action.



We highlight the large participation of women as lecturers and invited speakers in Action events, as result of the gender equality policy of the Management Committee of the Action.



Full report and Executive summary available in our [website](#)

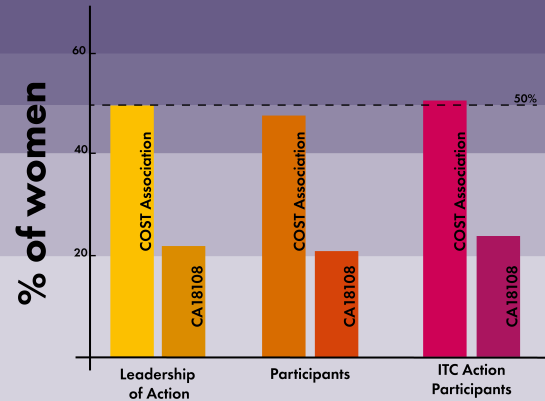
International Day of Women & Girls in Science 2022

Report on Gender Balance in our COST Action

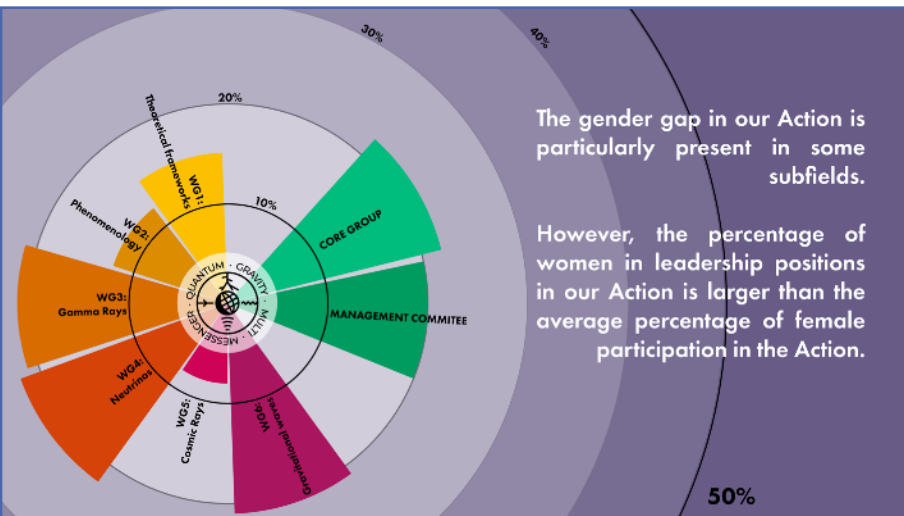


COST ACTION CA18108:

ON THE GENDER GAP



The gender gap, which is particularly large in the field of physics, clearly manifests in the statistics of the COST Action CA18108.



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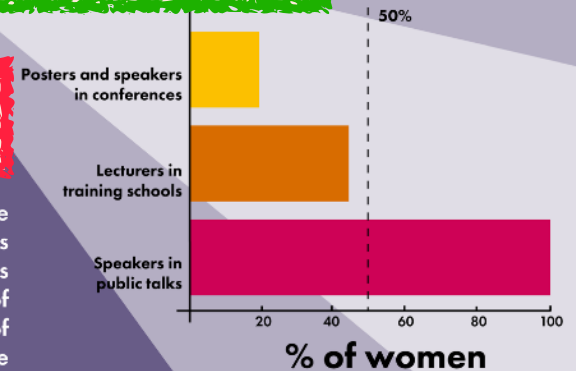
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Beneficiaries of STSM: 29%

2nd (3rd) Training School: 14% (0)

We highlight the large participation of women as lecturers and invited speakers in Action events, as result of the gender equality policy of the Management Committee of the Action.



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International Day of Women & Girls in Science 2023

Survey on Gender Equality in our COST Action

GENDER SURVEY COST ACTION 18108 QGMM

As part of the International Day of Women and Girls in Science, we have prepared the following survey regarding several aspects of Gender Equality in our Action and the scientific community.

Image title



To which gender identity do you most identify?

- Female
- Male
- Non-binary
- Other
- Prefer not to answer

Indicate your degree of agreement or disagreement with the following statements.

Description (optional)

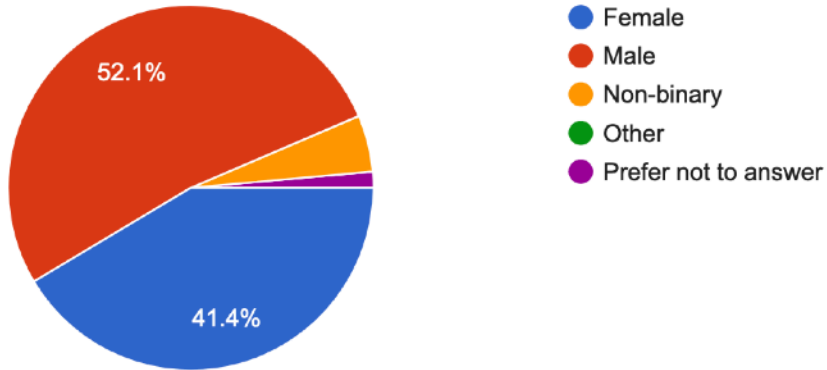
- shared in our social media
- 17 questions
- 141 responses
- 9 Feb - 17 March
- 46% members of CA18108
- results in our website

International Day of Women & Girls in Science 2023

Survey on Gender Equality in our COST Action

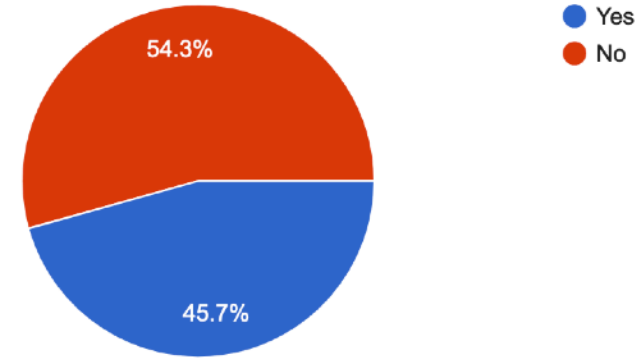
To which gender identity do you most identify?

140 responses

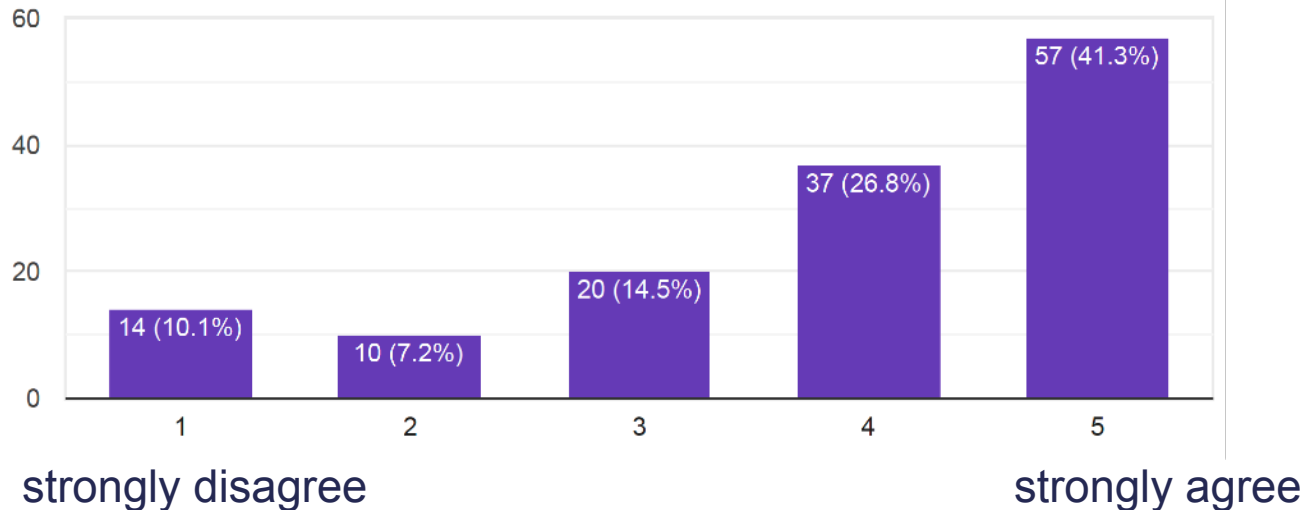


I belong to the COST Action CA18108

138 responses



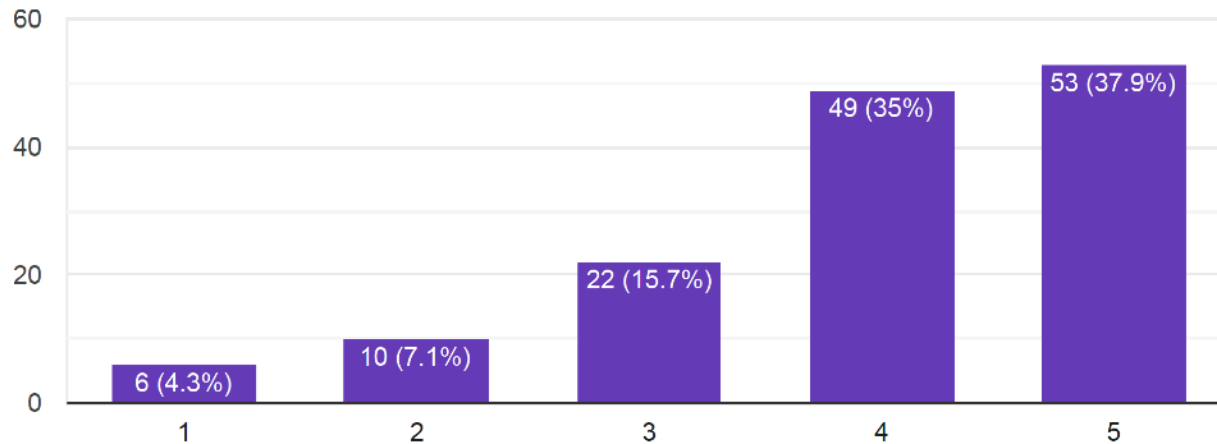
Gender balanced participation in Action events is very relevant



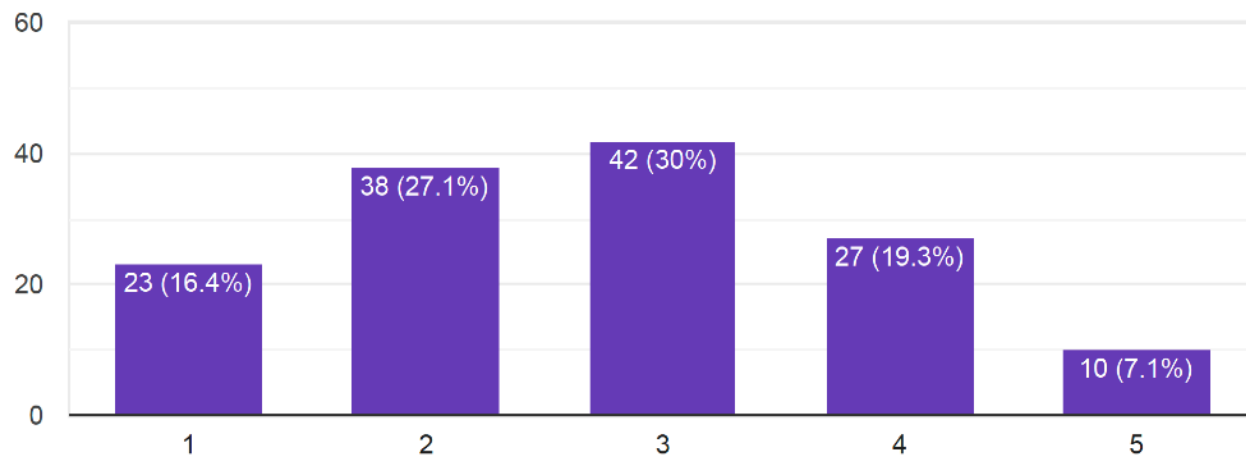
International Day of Women & Girls in Science 2023

Survey on Gender Equality in our COST Action

Women in my field with caring responsibilities are disadvantaged in their career



Men in my field with caring responsibilities are disadvantaged in their career



LGBTQIA+ pride month 2020

Interview with **Antonio Ferreiro** on his research on QG and the challenges faced by the LGBT+ community in theoretical physics



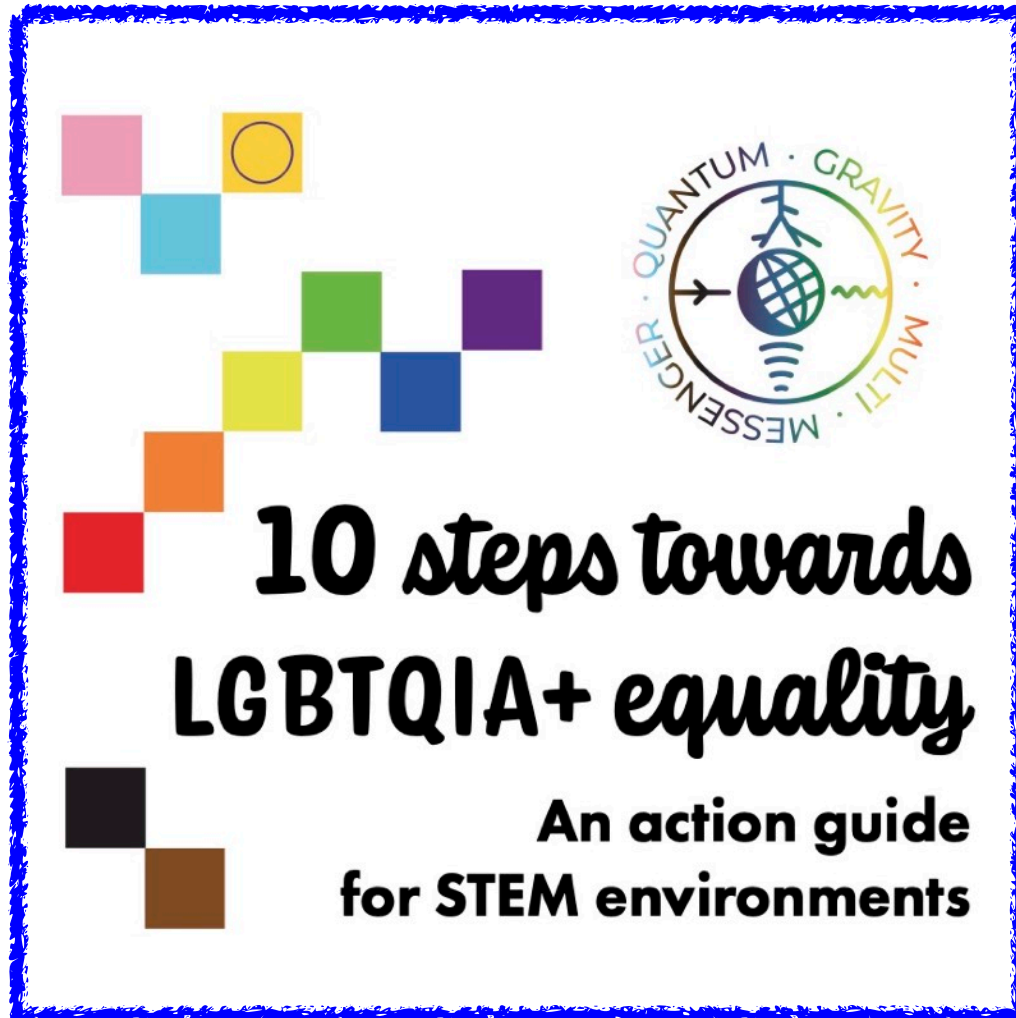
Pride version of QGMM logo



Interview by **Claudio Paganini**

LGBTQIA+ pride month 2023

Guide with 10 steps towards LGBTQIA+ equality in research
(based on document prepared by [@prismaciencia](#))



LGBTQIA+ pride month 2023

Guide with 10 steps towards LGBTQIA+ equality in research



EDUCATION

1. **Training staff** on LGBTQIA+ topics.
2. Supporting LGBTQIA+ visibility and equality in **outreach actions**.



PROTECTION


3. Establishing **safe channels** that can be used to report aggression, discrimination and harassment.
4. Ensure **equal opportunities for trans** and gender nonconforming individuals in recruitment and selection processes.



VISIBILITY

8. **Showcasing LGBTQIA+ role models** in STEM, as well as institutional support for the community.
9. Maintaining a **feminist and intersectional perspective** throughout all phases of this framework.
10. Promoting **research** topics within STEM that intersect with the LGBTQIA+ community, through diverse work teams.

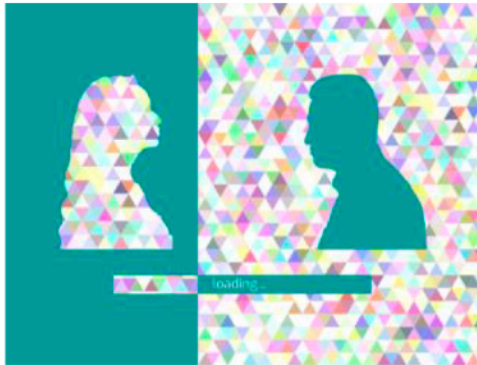
Antonio Ferreiro
Iarley P. Lobo
Pablo Martínez-Miravé



**COST ACADEMY WORKSHOP ON
GENDER EQUALITY IN RESEARCH AND INNOVATION**

**28 OCTOBER 2022
BRUSSELS**

Venue : Joint Research Centre (JRC)
Rue du Champ de Mars 21
1050 Brussels
Room : Floor -1, Salle de reunion 2
(ROOM CDMA -1/SDR2)



Example for other COST Actions!

**Gender equality activities in
CA18108:
Quantum gravity
phenomenology in the multi-
messenger approach (QG-MM)**

Mariam Tórtola
IFIC, CSIC/Universitat de València

**COST ACADEMY WORKSHOP ON
GENDER EQUALITY IN RESEARCH AND INNOVATION
28 OCTOBER 2022, BRUSSELS**

loading...



Thank you!

COMMITTEE FOR OUTREACH AND GENDER ACTIVITIES

Science Communication Manager: [Mariam Tórtola](#) (IFIC (UV-CSIC), Spain)

Committee Members:

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